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ABSTRACT

The proposed research project is designed to better understand the impact of organizational information processing variables on other organizational variables such as the organizational climate. A brief summary of the research related to organizational information processing and climate is followed by a suggested research design to study information processing and climate in academic and public libraries. Following the specific hypotheses for the project, the paper concludes by noting that such research will assist investigators to identify organizational climate contingencies where information variables are maximized/minimized, to describe the effect of various informational processing variables on specific aspects of organizational climate, and to develop models to predict the effect of information processing and organizational climate on overall organizational effectiveness. Included are 20 reference notes. (Author/RAA)

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An Approach to Study the Relationship Between Organizational Information Processing and Organizational Climate In Academic and Public Libraries

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ABSTRACT

This paper discusses a research project the goal of which is to better understand the impact of organizational information processing variables on other organizational dimensions such as organizational climate. A brief summary of the research related to organizational information processing and climate is presented followed by a suggested research design to study information processing and climate in academic and public libraries. After specific research hypotheses for the project are listed the paper concludes by noting that such research will assist investigators to (1) identify organizational climate contingencies where information processing variables are maximized/minimized, (2) describe the effect of various information processing variables on specific dimensions of organizational climate, and (3) develop models to predict the effect of information processing and organizational climate on overall organizational effectiveness.

Background

A persistent research problem that information scientists have attempted to address during recent years is to better understand the impact of various organizational information processing variables on other organizational dimensions such as decision making, productivity, perceptions, and ultimately effectiveness. However, to address these various relationships, researchers first have to develop operational definitions and measures related to organizational information processing.

In an excellent state of the art review of communication in organizations, Porter and Roberts suggest that we still know very little about (1) how information comes into organizations, (2) how it is internally generated in organizations, (3) how it is disseminated, regardless of origin, and (4) differences between internally and externally generated information. They stress the need for empirical research to study information-related variables in the organizational setting.[1]

Other writings from related areas such as interpersonal communication,[2] information for decision making,[3] the power of information,[4] the role of the information rich in organizational activities,[5] and managing information resources in an organizational context,[6] indicate the importance of the organization, as a whole, to acquire, process, and disseminate information. Furthermore, organizational information processing is likely to vary among different organizations due to organizational characteristics unique to a specific institution. Thus, measures of organizational information processing would take on increased meaning if they could be linked to additional measures that broadly describe that organization's unique characteristics.

One organizational measure that provides a broad analysis of the organization is organizational climate. Forehand and Gilmer[7] were among the earliest researchers to present a definition of organizational climate, but the work of Taguiri and Litwin[8] remains the most comprehensive discussion of the concept to date. They defined

organizational climate as "a relatively enduring quality of the internal environment of an organization that (a) is experienced by its members, (b) influences their behavior, and (c) can be described in terms of the values of a particular set of characteristics (or attributes) of the organization."[9] Organizational climate in non-library contexts has proven to be a viable method to distinguish and diagnose contingencies of an organization's psychological health. Climate measures have been used to study "open" or "closed" organizations,[10] leadership styles and motivational forces,[11] and managerial styles.[12]

In libraries, the study of organizational information processing and organizational climate appears to be particularly relevant. Organizational planning is one example where such research may have important implications. In a recent article discussing the nature of the planning process in academic libraries, this writer posed a number of questions which needed to be answered before libraries could engage in organizational restructuring and information processing; such may be pre-requisites to meet the demands for developing a long range planning process.[13] Samuels has suggested that measures of organizational climate may tend to predict the degree to which change--or planning for change--may be successful.[14]

In short, developing a procedure to describe and quantify an organization's information processing ability and climate may identify key variables to be modified before a change process can be realistically implemented. Further, the development of specific contingency relationships between the two variables will assist administrators to determine the likely effects of modifying a specific dimension of either information processing or organizational climate. Ultimately, such research will provide direct indicators of the impact of information processing variables on broader organizational measures such as climate.

Organizational Information Processing

Recent research by this writer suggests that professional librarians in an academic library process information in terms of (1) acquisition of information (2) evaluation of

information and (3) dissemination of information. Very few information sources tend to account for the vast majority of selections which are then used as a basis for decision making. Further, administrators and non-administrators had similar evaluations of information sources as input to decision making. Data also suggest that a significant relationship existed between the specific type of information source selected for a decision situation and the perceived importance of that decision.[15] Finally, the results also indicated that those librarians who effectively acquire, evaluate, and disseminate organization related information tend to be "powerful" within that organization and involved in decision making.[16]

The data from the above research were analyzed at an individual level of analysis. Informally, however, this researcher noted that organizations tend to have unique information processing characteristics. And although the professional librarians vary, as a group, similar information processing appear among the professionals within one organizational context. Thus, the following variables and operational definitions can be used to study organizational information processing:

1. Organizational Information Acquisition: The number of contacts with information sources by organizational members within a given time period, based on the assumption that each contact with an information source has the same potential impact regardless of individual. These scores can be averaged to compute an organizational score.

2. Organizational Information Dissemination

   The number of times organizational members initiate the giving of information to another individual in the organization, regardless of channel. These scores can be averaged to compute an organizational score.

3. Perceived Value of Information Resources: Identification of specific types of information resources that individuals perceive as "valuable" for specific types of decision situations. Based on these evaluations, organization scores can be computed that measure perceived value of information sources for decision making.

In the development of these measures, the term information is defined as data of value for decision making, it must resolve, reduce, or increase the uncertainty state of an individual.[17] Further, information sources, as used in these variables, relate to information of a professional or organizational nature. Information resources, contact, and dissemination not of a professional or organizational nature are excluded from consideration.

Organizational Climate

Research into the development of measures of library organizational climate has been initiated by Samuels. Drawing upon the Institutional Functional Inventory, developed by Educational Testing Service, he modified the instrument to determine specific measures of organizational climate in a public library environment.[18] The modified instrument was administered to a sample of public librarians and six scales were found to be reliable and valid measures of climate:[19]

1. Innovation: the readiness of a library to pursue innovative practices, policies, and services.
2. Support: the degree to which a library maintains mutually supporting relationships between different work groups within that library.
3. Freedom: the degree to which library staff feel co-opted by the organization in terms of the organization's rules, regulations, and "official" point of view.

4. Democratic Governance: the extent to which library staff feel that they have the opportunity to participate in library decision making.
5. Espirit: the level of morale and shared purpose among library staff.
6. Self-study and Planning: the willingness of a library to undergo meaningful self-study and self-diagnosis for service improvement.

The concept of climate will be measured by a series of statements in which respondents will be asked to "strongly agree, agree, disagree, or strongly disagree." The scores can be analyzed as a means to describe that organization's climate.

Institutional Variables

In addition to collecting data that describe the organization's climate and its information processing characteristics, institutional variables may be related to these climate and information processing characteristics. Variables to be measured include:

1. Collection size: the number of volumes in the library
2. Staff size: the number of professional librarians in the organization
3. Budget: total financial resources available for allocation in the last fiscal year
4. Education: an index of the average educational level of the professional staff in the library
5. Organizational tenure: average number of years employment of the professional staff in that library
6. Professional tenure: average number of years of library experience of the professional staff

These data will be collected for each organization at the same point in time as data for climate and information processing are obtained. Further, institutional data for each organization will relate climate and information processing data to the specific environmental context.

Method

A survey questionnaire will be developed to collect data about (1) organizational information processing, (2) organizational climate and (3) institutional variables. Although the primary level of analysis will be the organization, data will also be analyzed regarding individual information handling skills and climate perceptions. The questionnaire will be administered to professional librarians in a minimum of ten academic and ten public libraries that meet minimum criteria regarding collection size, budget, and staff size. The population will consist of libraries meeting the above criteria listed in American Library Directory; the sample will be geographically stratified and randomly selected until ten each of public and academic libraries agree to participate in the study.

Although both McClure's information processing measures and Samuel's organizational climate measures have been tested individually as valid and reliable, their validity and reliability in a combined questionnaire must be determined; therefore, split-half reliability scores, Kudor-Richardson reliability scores, and utilization of factor analysis of selected responses to determine convergent validity of the data will be developed. These procedures will analyze the overall reliability and validity of the data and determine its accurateness and generalizability to libraries as well as public service organizations in general.

Ultimately, the researchers will obtain three levels of data for each participating library. Figure 1 summarizes the expected data that will be available for analysis. Based on this data, comparisons can be made among the various organizations as to the relationships among the three types of variables. Appropriate statistical tests will be performed to address the following hypotheses:

1. Specific organizational climate dimensions are related to specific information processing dimensions.

FIGURE 1
Summary of Data

LIBRARIES	INFORMATION PROCESSING VARIABLES				ORGANIZATIONAL CLIMATE VARIABLES							INSTITUTIONAL VARIABLES						
	Acquisition	Perceived Value	Dissemination	Overall Score	Innovation	Support	Freedom	Dem. Gov.	Esprit	Self-Study	Overall Score	Collection Size	Staff Size	Budget	Education	Org. Tenure	Prof. Tenure
Academic																	
Library A																	
Library B																	
Library C																	
Library D																	
_etc.																	
Public																	
Library L																	
Library M																	
Library N																	
Library O																	
_etc.																	

2. Different climate dimensions will be related to information processing variables in academic libraries as compared to public libraries.
3. Perceived value of information resources is related to organizational climate scores.
4. Information resources acquired by public librarians are similiar to those acquired by academic librarians.

These hypotheses are suggested as beginning points to direct the overall data analysis. Additional areas of interest such as the effect of specific dimensions of information processing on various dimensions of organizational climate, the impact of institutional characteristics on both information processing and organizational climate, and differences between administrators' and non-administrators' perceptions of organizational information processing and climate will also be examined.

Importance

In the past, researchers have tended to look at organizational inputs and outputs without examining the various contexts of those inputs and outputs. One such context is information processing--the ability of the organization to acquire, evaluate, and disseminate information related broadly to the accomplishment of organizational goals and objectives. The organization's self-image in terms of its overall climate provides an environment that facilitates or limits the organization's effectiveness. Perceived "health" of the organization along various climate dimensions is likely to be related to a broad range of organizational activities. Examination of both of these concepts within the single organization is likely to provide researchers with important clues as to the importance, or perhaps unimportance, of information processing variables within the broader context of organizational climate.

Ultimately, such research will enable investigators to (1) identify organizational climate contengencies where information processing variables are maximized/minimized, (2) describe the effect of various information processing variables on specific dimensions of organizational climate, and eventually, (3) develop models to predict the effect of information processing and organizational climate on overall organizational effectiveness. Indeed, the overall goal of such research is to increase organizational effectiveness by developing administrative strategies for information resources management.[20]

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